Retain: Journal of Research in English Language Teaching
Volume 13 Number 02 Year 2025, pg 11-21
ISSN 3032-2839

The Use of Pronunciation Training Based on Automatic Speech Recognition of ELSA Speak Application for EFL Students

Rizky Liliani Febrianti
Universitas Negeri Surabaya
Rizky.18087@mhs.unesa.ac.id

Abstrak

Bahasa Inggris merupakan bahasa yang paling banyak digunakan untuk berkomunikasi di berbagai bidang seperti perdagangan internasional, diplomasi, pendidikan, dan telekomunikasi internasional. Mengetahui pentingnya komunikasi di era ini, Bahasa Inggris diajarkan di seluruh dunia, termasuk di Indonesia, dengan tujuan untuk membekali siswa EFL dengan kemahiran untuk membuka berbagai peluang karier di masa depan. Oleh karena itu, siswa perlu melatih pelafalan Bahasa Inggris dan aspek terkait lainnya agar dapat berbicara dengan jelas. Namun, tidak semudah itu mempelajari *pronunciation* bagi siswa EFL. Ketika berlatih *pronunciation*, kesalahan dalam fonologi atau pengucapan sering terjadi. Untungnya, kemajuan teknologi dalam pendidikan menawarkan solusi untuk kasus ini. Aplikasi ELSA Speak yang didukung dengan *Automatic Speech Recognition* (ASR), membantu siswa dalam melatih pelafalan mereka. Sebuah sekolah menengah atas di Krian telah mengadopsi aplikasi ini sebagai alat pembelajaran di kelas Bahasa Inggris untuk meningkatkan keterampilan *pronunciation* siswa *EFL*. Penelitian ini bertujuan untuk mengetahui bagaimana penerapan aplikasi ELSA Speak sebagai partner Latihan *pronunciation* siswa, dampak aplikasi terhadap kemampuan pengucapan siswa, dan respons siswa terhadap kinerja aplikasi. Penelitian ini menggunakan metode campuran yang menggabungkan data kualitatif dan kuantitatif. Jumlah sampel adalah 30 siswa. Hasil penelitian menunjukkan bahwa: (1) Aplikasi ELSA Speak diterapkan sebagai teman belajar untuk melatih pelafalan kosakata baru. Aplikasi ini menawarkan latihan secara daring yang fleksibel, pengenalan suara buatan, menganalisis kesalahan *pronunciation* dan menyediakan umpan balik yang membangun agar dapat memingkatkan kemampuan *pronunciation* siswa. (2) Rata-rata skor *pre-test* dan *post-test* siswa mengalami kemajuan hingga 72%, uji-t sampel *paired test* menggunakan SPSS menunjukkan bahwa *t-value* > *t-table* (35,288 > 1,69913) dengan taraf signifikansi 0,05 > 0,000. Dapat disimpulkan bahwa H0 ditolak yang berarti terdapat perbedaan antara hasil pre-test dan post-test, dan hasil rumus *effect size* menunjukkan bahwa pengaruh perlakuan ini sebesar 0,64. Hasil *Effect size* antara 0,2 < ES < 0,8 menunjukkan pengaruh kategori sedang. (3) Semua kuesioner yang terkait dengan kinerja aplikasi ELSA Speak memperoleh respons positif, yang berarti bahwa siswa merasa puas dengan kinerja aplikasi ELSA Speak. Sebagai kesimpulan, aplikasi ELSA terbukti efektif sebagai alat dan teman latihan untuk meningkatkan keterampilan pengucapan siswa, fitur-fitur aplikasi ini memenuhi kebutuhan siswa untuk melatih aspek-aspek penting dalam *pronunciation* seperti akurasi, kelancaran, tekanan, dan intonasi untuk dapat mengucapkan kata-kata dengan benar.

Kata Kunci: *Pronunciation Training, Automatic Speech Recognition, Elsa Speak Application, EFL Students*.

Abstract

English is the most used language for communication in fields such as international trade, diplomacy, education, and international telecommunications. Knowing the importance of communication in this era, English is being taught worldwide, including in Indonesia, with the aim of equipping EFL students with proficiency to open up a wide range of future career opportunities. But, is not that easy to learn pronunciation, when practicing pronunciation, errors in phonology or pronunciation are common. Fortunately, technological advancements in education offer solutions for this case. The ELSA Speak application supported with Automatic Speech Recognition (ASR), helps students in practicing their pronunciation. A high school in Krian has adopted this application as a learning tool in English classes to improve the pronunciation skills of EFL students. This research aimed to discover how the implementation of the ELSA Speak application as student's learning partner, the impact of the app on students' pronunciation ability, and the students' responses toward the performance of the application. This study used a mixed method that combined qualitative and quantitative data. The number of samples was 30 students. The findings revealed that: (1) The ELSA Speak was implemented as a partner for training difficult and new vocabulary pronunciation. This application offers flexible online pronunciation exercise, artificial speech recognition, pronunciation analysis and constructive feedback to improve the students' speaking skills. (2) The

average of students' pre-test and post-test scores had growth up to 72%, the paired sample t-test using SPSS showed that the t-value > t-table (35.288 > 1.69913) with a significance level of 0.05 > 0.000. It can be concluded that H0 is rejected which means there is a difference between the pre-test and post-test results, and the result of effect size formula showed that the effect of this treatment was 0.64. The effect size between 0.2 < ES < 0.8 indicated to be a medium-category effect. (3) All the questionnaires related to the ELSA Speak application's performance obtained positive responses, which means that the students were satisfied with the ELSA Speak application performance. In conclusion, the ELSA application proved its effectiveness as a tool and practice partner in improving students' pronunciation skills, the features of this app fill the needs of students to practice important aspects such as accuracy, fluency, stressing, and intonation to be able to pronounce words correctly.
Keywords: Pronunciation Training, Automatic Speech Recognition, Elsa Speak Application, EFL Students.

INTRODUCTION

English has become a global language due to its widespread use across multiple sectors. English enables people from diverse cultural and linguistic backgrounds to access knowledge, opportunities and resources. There is an abundance of educational materials and knowledge resources available in English. Since English serves as a global language, educators bear the responsibility of teaching English to benefit people everywhere and help others realize how essential English proficiency is to people for facing the global market and broader professional purposes beyond just communication (Rao, 2019). Thus, English is being taught and learned worldwide as a second or foreign language today, including in Indonesia. EFL students are prepared and expected to be able to speak English well to open up a wide range of new opportunities for their future careers (el Majidi et al., 2021). There are several sub-skills of speaking that students need to learn, such as pronunciation, fluency, intonation, accuracy, shyness, lack of confidence, and anxiety (Shen & Chiu, 2019). It is undeniable that Indonesian EFL students lack sufficient pronunciation because they are not born as native speakers. These issues may escalate into significant concerns if left unaddressed. Due to pronunciation errors, students will have difficulty for conversing, and listeners will have trouble interpreting what the speaker means. Therefore, English teachers need to familiarize students with practicing speaking over and over, along with giving them constructive feedback on each exercise (Richards, 2008)

However, learning pronunciation is quite challenging since the Indonesian and English possess distinct fricative sound systems. Cross-linguistic phonetic differences can be alternatively overcome by providing instructional approaches that focus on the difficult sounds and fricatives (Ristati et al., 2024). Cruttenden (2014) believes that prioritizing detailed guidance on English pronunciation for native speakers could enhance their speaking skills. Students need to empower their awareness of pronunciation elements such as phonetics, pitch, rhythm, intonation, and stress. Those elements support students in getting accustomed English phonological system so they can acquire the target language easily (Maiza, 2020). While practicing pronunciation, students commonly make phonological errors, but these mistakes should be corrected. Pronunciation error correction is one of the things that occupy a vital role in the outcome of students' speaking skills. Milena Andrade Quiñónez et al. (2021) stated that general correction is a common strategy applied by teachers to help students increase their oral ability. Nevertheless, the method to improve their speaking skill by correcting students' pronunciation errors is not effective. Therefore, English teachers need to stay current and explore additional effective methods for incorporating modern technology to develop improved teaching approaches (McDonough et al., 2013).

Many learning applications integrate artificial intelligence (AI) technology that adapts to individual students' needs, upgrading learning experiences that support the overall educational process (Chen et al., 2020). One example that specifically focuses on improving students' pronunciation is the ELSA Speak app, which uses artificial speech recognition (ASR) to analyze users' voices, spot the mistakes, and provide feedback. The previous research study by Rinaepi et al. (2022) revealed that this application was able to enhance students' learning motivation by 25,45%. Additionally, statistical comparisons between pre-test and post-test scores showed an improvement of pronunciation skills up to 17%. The research confirmed that the ELSA Speak application successfully improves the students' pronunciation skills.

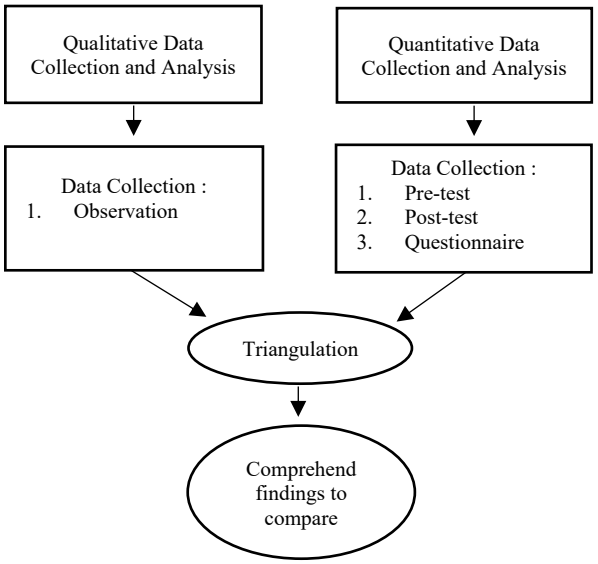
This newly learning tool attracts the researcher's attention to observe closely how this mobile-assisted language learning works to help students practice their pronunciation in the teaching and learning process. According to theory and practical application, the researcher is passionate for exploring the utilization of an ASR-based pronunciation training application at a high school in Krian, East Java. The main objective of this study is to understand how the teaching-learning process

in the classroom using the ELSA Speak application as students' training partner, examine its impact on students' pronunciation improvement and also embrace the students' point of view relating to their experience using the ELSA Speak app to understand their perceptions of the application.

METHODS

The researcher conducted a mixed method that combines qualitative and quantitative data. Integrated two approaches to complete the weaknesses of a single approach through collecting data from the research phenomenon and presenting a comprehensive result (Cohen, 2018). The procedure executed by the convergence model is illustrated below.

Figure 1. Convergent Design



(Creswell, 2018)

In this study, the research design was a triangulation design in which qualitative and quantitative data were collected sequentially at the same time to complement and strengthen each data. In greater detail, the researcher used a single-phase triangulation design, namely the convergent model. Both data were collected and evaluated separately, and the results were compared to determine whether they were expected to provide the same or different outcomes.

This Research took place at a high school in Krian, where the teacher utilized the mobile application ELSA Speak as learning material for practicing pronunciation. This study involved a cohort of tenth-grade students, specifically those from class X-2 (N=30). The selection of this sample was based on the recommendation of the class teacher, who was consulted due to their comprehensive understanding of individual student characteristics and classroom dynamics that would be relevant to the research needs.

Every move of their behavior during learning activities while utilizing the ELSA application was observed. The researcher was continuously monitored each of their activities for one month in pronunciation training progress and each activity was archived into field note observations. The instruments needed to support observation data collection were prepared lesson plans and field notes.

To evaluate the students' improvement in pronunciation, the distributed t-tests were used to measure students' pronunciation skills to obtain results by comparing their pronunciation performance before and after using the ELSA Speak application. The participants were asked to pronounce the number of words related to their learning material, then recorded their voice through WhatsApp voice notes and sent them to the researcher. Subsequently, the teacher assessed the voice recorded. Soon after, the researcher collected both results and compared them. Additionally, the obtained scores were compared statistically using a paired test on SPSS to calculate the t-value, degree of freedom and significance value. Hence, the researcher could draw the conclusion of the difference of students' performance improvement between pre-test and post-test. The researcher also used the effect size formula to measure the true impact of the treatment on students' pronunciation improvement. This calculation provided a standardized measurement of improvement that could determine whether the application was categorized as a small, medium, or large impact as an effective learning tool.

At the end of the research activity, the researcher conducted a close-ended online questionnaire on the effectiveness of the ELSA Speak application on students' pronunciation improvement by asking them to fill in the provided contents of a questionnaire related to research needs. the researcher employed the Likert scale formula to determine the number of questionnaire summaries. The collected data were analyzed and expected to obtain a comprehensive explanation of the effectiveness of the application in improving students' pronunciation skills as well as students' thoughts of the app's performance. The results of the analysis were interpreted to derive conclusions about the effectiveness proof of the ELSA application in improving students' pronunciation skills. Then the researcher offered appropriate suggestions for further study in an educational context following the structure of the research report which included all the steps, results, and interpretations found during the research.

RESULTS AND DISCUSSION

In this section, the study results were presented, highlighting the key data and observations that emerged from the research process. The findings were organized according to the research questions.

a. Observation

Observations were organized for five meetings in one month, the research started from the 2nd to the 18th of May 2023. The 2nd of May meeting measured students' pronunciation abilities at the beginning, three core meetings on May 3rd, 10th, and 17th were scheduled to observe the teaching and learning process, final meeting on the 18th examined students' pronunciation abilities after practicing pronunciation through the ELSA Speak application and distributed the questionnaires. Researchers utilized a non-participant observation model, whereby the researcher did not engage in part in the actual activities under investigation. Throughout the research procedure, the researcher recorded every activity that both teachers and students took without preparation or briefing into field notes. A comprehensive description is revealed in the following section below.

1st Meeting

During the initial meeting, the teaching and learning process proceeded naturally. The teacher introduced the topic of analytical exposition, which was integrated into the program they used soon. A demonstration of how to use the concept was provided by the teacher. Additionally, she offered substantial support to students in distinguishing between vowels and consonants, which will be displayed as additional supporting feedback from the Elsa Speak Application. Students exhibited varied reactions to the application; some looked enthusiastic, others experienced confusion regarding its usage, and a significant number simply disregarded it. Since some of the students had not downloaded the Elsa Speak App yet. Consequently, the teacher organized study groups to facilitate the collective practice of English pronunciation. Throughout the practice sections, students frequently made pronunciation mistakes, particularly pronouncing sounds such as /θ/, /dʒ/, and /ð/, which were unfamiliar in their mother tongue. They often repeat words due to difficulties in shifting from their native language's pronunciation patterns. This hesitancy and fear of incorrect pronunciation held back their potential to improve. Despite these challenges, the Automatic Speech Recognition in the Elsa app was ready to provide continuous feedback until the students achieved accurate pronunciation. The system effectively supported students in overcoming their difficulties with specific syllables and sounds, notably the "th" sound, which posed a significant challenge in their language acquisition process.

2nd Meeting

The teacher continued with the previously introduced material and actively engaged students in the read-aloud technique using the example of analytical exposition texts. During these read-aloud sessions, students were instructed to use the Elsa app to practice challenging phrases. The classroom atmosphere was well-controlled and conducive to learn, with students extensively utilizing the application. Compared to the previous meeting, students showed improved pronunciation and increased confidence. They were not afraid to make mistakes anymore, they faced and accepted their weaknesses and tried to to upgrade their pronunciation. The frequency of pronunciation mistakes gradually decreased due to the Elsa system's corrective feedback, which required students to repeatedly practice the mispronounced words, thereby enabling them to identify and correct their errors. Additionally, students quickly grasped the feedback from ELSA, as it was provided in a simple and comprehensible format, including audio tutorials and phonetic symbols. This facilitated a more efficient learning process, helping students to improve their pronunciation accuracy over time.

3rd Meeting

The teacher completed delivering all instructional material. Students were subsequently assigned a final task, which required them to compose analytical exposition texts individually. During this session, students utilized the ELSA application to enhance their pronunciation skills in preparation for their in-class presentations of the analytical exposition texts. Mainly, the frequency of repeated pronunciation mistakes among students significantly decreased. They even practiced articulating various words, phrases, and sentences with increased confidence and without hesitation. Additionally, many students engaged in extended pronunciation exercises, showing a willingness to tackle longer and more complex sentences. Researchers recognized through observations, the fact that when the ELSA program was employed in teaching and learning activities, it could assist students in improving and correcting their weak English pronunciation, and it was an effective way to improve pronunciation. The program not only assisted learners by providing accurate pronunciation demonstrations, but it was also able to detect students' pronunciation errors. The ELSA Speak app pronunciation training method requires students to keep repeating words, phrases, and sentences right until they are correct. This helped students rapidly grow and get used to English accents and pronunciation. From the results of this observation report, it can be concluded that practicing pronunciation with the Elsa Speak application helped students overcome their pronunciation difficulties

and also increased their confidence in using the language they learned.

b. Test

This section presents the findings from evaluating students' pronunciation skills through pre-test and post-test assessments. The pronunciation test scores obtained from students were organized and displayed in the following table to facilitate a general comparison of students' test results between students' pronunciation skills after using the pronunciation training application. Then, the scores were compared using a paired test in SPSS to determine if there was a significant difference between the two sets of test data from the subject. The mean score and standard deviation collected from the paired test were calculated using the effect size formula to seek how much the magnitude of the applied treatment impact.

Table 1. The Frequency and Rate Percentage of The Students' Pre-test and Post-test Scores

No	Classification	Pre-Test		Post-Test	
		Frequency	Percentage	Frequency	Percentage
1.	Excellent	0	0	29	96,67
2.	Very Good	5	16,6	1	3,3
3.	Average	23	76,7	0	0
4.	Low	2	6,7	0	0
5.	Failed	0	0	0	0
	Total	30	100	30	100

The table above contains the students' pronunciation scores before and after applying the ELSA Speak app as a practice partner for students to continuously exercise pronunciation. The pre-test revealed the outcomes of the students' pronunciation test; there were only 5 students (16,6%) who passed the grade, and the rest 23 students (76,7%) obtained average scores and 2 students (6,7%) got low scores. The post-test results table showed that all students achieved the completion criterion and surpassed their prior pronunciation pre-test score. A total of 29 students (96,67%) obtained high scores with an excellent classification and only 1 student (3,3%) obtained a very good score. This comparison revealed that integrating the ELSA Speak app in attempts to enhance student pronunciation could improve efficiency in increasing student pronunciation skills, according to the results of the pre-test with an average score of 52, and the post-test with an average score of 89. Pronunciation abilities improved significantly for the students; the average score increased by 72% between the pre-test and post-tests. This indicates the beneficial effects of the learning process was able to improve their pronunciation skills.

Table 2. Paired Sample Test Statistic

	Paired Differences				
	Mean	Deviation	Mean	T	df
Pre-test Post-test	3.64333E1	5.65492	1.03244	35.288	29

Based on the table above, it can be seen that the t-value is 35.288 with a significance level of 0.000. With a degree of freedom value, which was the sample number – one (30-1=29), the t-table value is 1.69913. Therefore, the t-value > t-table (35.288 > 1.69913) had a significance level of 0.05 > 0.000. It can be concluded that H0 is rejected, which means there was a difference between the pre-test and post-test results, and there was a positive and significant effect of using the ELSA Speak application on improving students' pronunciation abilities. The following statistical analysis applied effect size calculations.

$$ES = \frac{3,6433}{5,6549}$$
$$ES = 0,644$$

The calculations measured by the effect size formula showed that the effect of this treatment was 0.64. The effect size between 0.2 < ES < 0.8 classified to be a medium category effect. This calculation result proved that the use of the ELSA Speak application in practicing pronunciation has a medium impact on improving students' pronunciation abilities.

c. Questionnaire

This research was based on data collection through online questionnaire distribution to students who used the ELSA application. Each questionnaire question was coded according to the criteria that were assessed; there were ten questions divided into three types of objectives. The first objective of this research was to evaluate students' experiences while using the ELSA Speak application, the second was to measure its effect on progress in students' pronunciation skills, and the third was to assess its impact on students' learning motivation. The questionnaire contained ten statements designed to understand students' perceptions and beliefs about the application. The table below summarizes the questionnaire results, including statements, frequencies, and percentages. Each response category is symbolized in abbreviations: VD (very disagree), D (disagree), N (neutral), A (agree), and HA (highly agree).

Table 3. Questionnaire Result 1 – Objectives: Students' experience using the Elsa Speak App as a training partner.

No	Statements	Scales (Percentage and Frequency)				
		VD	D	N	A	HA
1.	Practicing pronunciation using the ELSA speak application is easier than practicing pronunciation using the old method	0 % (0)	0% (0)	10% (3)	43,4% (13)	46,7% (14)
2.	Operating the ELSA speak app is quite easy starting from sign-in an account to practicing pronunciation with its features	0 (0%)	3 (10%)	5 (16,7%)	13 (43,3%)	9 (30%)
3.	I didn't have any difficulties using several features in the ELSA Speak application.	0 (0%)	3 (10%)	3 (10%)	12 (40%)	12 (40%)
4.	I highly recommend the ELSA Speak app for my friends and relatives to improve their pronunciation	0 (0%)	1 (3,3%)	4 (13,3%)	12 (40%)	13 (43.3%)

The table above displayed the questionnaire result for the first objective. It contained four numbers of statements related to the kind of the objectives. All numbers succeeded in gaining positive votes from the samples involved as research participants. However, each total response of statements questioned was obtained on different scales. According to the first statement in the questionnaire distribution data above, testified that for a total of 30 students, 3 students (10%) chose neutral, 13 students (43,3%) chose agree, 14 students (46,7%) chose highly agree and none of the students chose very disagree or disagree. Based on this percentage value, the highest scale percentage is “Highly Agree” and it could be concluded that using the ELSA Speak app to practice pronunciation is easier than the old method. It related to the observation results, students have no difficulty in operating the app, they are capable of fast-adapting to using the pronunciation trainer app.

Second statement acquired 13 votes (43,3%) of “Agree” as the highest frequency, 3 students (10%) chose disagree, 5 students (16,7%) chose neutral, and 9 students (30%) chose highly agree, and none the students chose very disagree. It could be confirmed that the Elsa Speak app is easy to use, from signing up to using the pronunciation practice features.

Following the third statement's results, three students (10%) said they disagreed with the application's training elements, while the same number of students (10%) selected the neutral choice. Conversely, the rest 12 students (40%) selected the “agree” choice, while the remaining 12 students (40%), selected the “strongly agree” option. None of the pupils selected the option for strongly disagree. Due to this report, the majority of students (80% with a combination of "Agree" and "Strongly Agree") responded well to the Elsa Speak application's training app. This pointed out that these students had no significant trouble using these features.

In the fourth statement, one student (3.3%) reacted that they disagreed with this application, and four students (13.3%) picked the neutral choice. The majority of students, 12 (40%), expressed they agreed with the application, while thirteen students (43.3%) selected the highly agree option. None of the pupils selected the strongly disagree option. From the existed data, the greatest score (43.3%) fell under the "Strongly Agree" category, showcased major students suggested this program to their friends and family as a way to enhance their language-speech abilities.

These findings proved that the ELSA speaking application helped help students enhance their speaking abilities. Students' strong recommendations also demonstrated their satisfaction with the application's user experience. However, it was necessary to note that this study only contained the perspectives of the students participating, and further research may be required to enhance the generalizability of these findings. The outcomes of the questionnaire data, which attempted to evaluate the experience of using the ELSA Speak application, proved that students offered good feedback. The majority of students thought practicing pronunciation using the ELSA program was simpler than the prior technique. Aside from that, practically all respondents stated that using the ELSA program is simple, from account setup to utilizing its features. Most students also indicated that they had no difficulty when using the practice features provided by the ELSA application. Lastly, the majority of students highly recommend using the ELSA application to their relatives and friends as a means to practice English pronunciation skills.

Table 4. Questionnaire Result 2 – Objectives: The impact of the ELSA Speak App on students' pronunciation ability.

No	Statements	Scales (Percentage and Frequency)				
		VD	D	N	A	HA
1.	The ELSA Speak app's training tool helps me understand how to pronounce words in English accurately.	0 (0%)	0 (0%)	2 (6,7%)	11 (36,7%)	17 (56,6%)
2.	The ELSA Speak app helps me in correcting my incorrect pronunciation.	0 (0%)	0 (0%)	3 (10%)	9 (30%)	18 (60%)
3.	With its capabilities, such as pronunciation error recognition and feedback, the Elsa Speak App helps me improve my pronunciation.	0 (0%)	0 (0%)	1 (3.3%)	12 (40%)	17 (56,7%)
4.	ELSA feedback assists me in understanding English pronunciation mistakes and identifying necessary pronunciation improvements.	0 (0%)	0 (0%)	0 (0%)	10 (33.3%)	20 (66,7%)
5.	ELSA assisted me in correcting my pronunciation errors and told me where my pronunciation errors were.	0 (0%)	0 (0%)	2 (6,6%)	11 (36,7%)	17 (56,7%)

The table above shows the result of the second objective, which focuses on how worthwhile the Elsa Speak app was for practicing pronunciation. It started by exploring the students' votes on the tool's performance. The related statements were spread in five numbers; the first statement talked about the feasibility of the practice tools of Elsa to assist students in pronouncing English accurately. For a total of 30 students, 2 students (6,7%) chose neutral, 11 students (36,7%) chose agree, 17 students (56,6%) chose highly agree, and none of the students chose disagree and very disagree. Based on this percentage value, the highest scale percentage is "Highly Agree" and it can be concluded that The ELSA Speak app's training tool helps students understand how to pronounce words in English correctly.

And the highest rate for the second statement was "Highly Agree", out of the thirty students, three (10%) selected neutral, nine (30%) selected agree, eighteen (60%) selected highly agree, and not a single student selected disagree or very disagree. Therefore, it can be assumed that the Elsa Speak App genuinely assisted students in correcting their mispronounce.

The next questionnaire distribution data for the third statement displayed that for a total of 30 students, 1 student (3,3%) chose neutral, 12 students 40 %) chose agree, 17 students (56,7%) chose highly agree, and none of the students chose disagree and very disagree. Based on this percentage value, the highest scale percentage is "Highly Agree" and it can be concluded that The Elsa Speak App assist students in improving their pronunciation by providing features such as pronunciation error recognition and feedback.

Next statement, stated that the Elsa's feedback could assist students in understanding and identifying their mistakes in order to improve their pronunciation ability, for a total of 30 students, 10 students (33,3%) were agree, 20 students (66,7%) chose highly agree, and none of the students felt disagree and very disagree. Based on this percentage value, the highest scale percentage is "Highly Agree", obviously that ELSA feedback helped students comprehend English pronunciation errors and identify necessary pronunciation corrections.

The last one also obtained the same highest rate, 2 students (6,6%) chose neutral, 11 students (36,7%) positioned neutral choice, 17 students (56,7%) chose highly agree, and none of the students chose disagree and very disagree. Based on this percentage value, the highest scale percentage is "Highly Agree" and it can be concluded that ELSA assisted students in correcting their pronunciation errors as well as advising them.

Table 5. Questionnaire Result 3 – Objectives: The Elsa Speak App in boosting students' motivation.

No	Statements	Scales (Percentage and Frequency)				
		VD	D	N	A	HA
1.	The ELSA Speak app makes me to practice more	0 (0%)	0 (0%)	4 (13,3%)	11 (36,7%)	15 (50%)

The table above revealed that four students (13.3%) selected the neutral option, eleven students (36.7%) picked the agree option, and fifteen students (50%) chose the strongly agree option concerning the ELSA Speak Application. and none of the students chose to disagree and very disagree. It was obvious the Elsa Speak app was able to provide a compact learning app and a good environment to learn pronunciation so that students could be willing to practice.

The purpose of this study was to discover and comprehend the efficacy of utilizing the ELSA Speak app in an attempt to improve EFL students' pronunciation abilities. In line with this aim, this research was conducted using the following kinds of research instruments, specifically observation, paired t-test and questionnaire on teaching and learning activities using the ELSA Speak app, with the research object of tenth-grade high school students in Krian. Researchers distributed a designed pre-test for the topic they were studying before executing observations to examine their pronunciation abilities before getting instruction via the ELSA Speak app. The researcher presented the outcomes of each finding from the data collection which was covered in the previous sub-chapter.

The Implementation of the ELSA Speak App as Students' Partner in Improving Low Pronunciation

The observation results revealed significant changes in students' pronunciation abilities and increased their confidence in using the ELSA Speak App as their exercise partner. The integration of this application makes a positive contribution to pronunciation learning, showing great potential for improving students' language skills through the use of technology in the learning process. Furthermore, the students have the opportunity to practice pronunciation autonomously using the Elsa Speak app, enabling them to engage in exercises whenever and wherever. The app accommodates students with varying proficiency levels within the same class; those with lower proficiency can continue practicing to reach higher levels, while advanced students can further refine their skills and explore topics depending on their interests.

This brought out the great influence of technology such as the ELSA Speak App in improving students' pronunciation skills at High School in Krian. This claim coincides with study research, by Ersan et al. (2022) conducted in the classroom. Instead of only having students pay attention to the teacher, which will leave them bored or even too lazy to exercise, teachers should train students to use media that they are acquainted with to facilitate their pronunciation practice. In comparison, learners become impressed when they utilize familiar media, such as smartphones, since it makes learning easier and enables them to use their own devices. Moreover, these results align with findings from a similar study conducted by Hanna et al. (2022). Researchers have demonstrated that the use of the Elsa Speak application can substantially enhance students' fluency in speaking with accurate pronunciation. Learning through Elsa Speak presents numerous benefits, such as a wide range of topics that can be customized to meet user needs, providing users with the flexibility to select the topics they wish to practice. Additionally, as stated by Quinde et al. (2023). The Elsa application serves as an invaluable resource for autonomous learning. It stands out as one of the most effective tools currently available for improving English pronunciation due to its ability to accurately recognize the accents of non-native speakers and facilitate the appropriate repetition of words. The same thought comes from Saragih et al. (2021), The ELSA Speak app boosts their confidence and decreases fear and anxiety when speaking or narrating stories in English. Moreover, ELSA Speak is highly suitable for users of all backgrounds. The feature within the English Pronunciation Phonetics app that presents phonetic symbols supports the pronunciation learning process, leading to an enhancement in students' pronunciation skills (Adityarini et al., 2022).

Students' Improvement in Pronunciation Skills

The results of the analysis show that there is a significant difference between the pre-test and post-test results in students' pronunciation abilities. According to the findings, the average score on the pre-test, which was the first assessment obtained before implementing an intervention was 52. However, following a period of extensive pronunciation practice utilizing the ELSA Speak app, the students' post-test average score increased greatly, reaching 89. And the average score between post-test scores grew significantly by 72% from the pre-test score. This statistical improvement was accompanied by positive changes in students' behavior. Students are able to pronounce words accurately and confidently. They were no longer worrying about their mispronunciation or even hesitating during practice sessions. They felt secure when learning new vocabulary and motivated to explore additional pronunciation materials. The distinction of students' pronunciation skills on the pre-test and post-test showed improvements that indicated the worth of employing the ELSA program in increasing students' pronunciation abilities. These findings are the same as findings from previous research by Pangastuti (2021), the conclusion claimed that the ELSA Speak application provided significant support in improving students' pronunciation skills during the learning process.

To evaluate the effect or contribution of the ELSA application to improving students' pronunciation skills, the researcher additionally used some statistical techniques in this study. The researcher carried out calculations using paired test and effect size. The paired test was used to compare the results between pre-test and post-test students when using the ELSA application while the SPSS-based paired test revealed a substantial change in students' pronunciation ability between pre-test and post-test findings. The rejection of the null hypothesis indicated that there was substantial statistical evidence that the

differentiation between the pre-test and post-test results could not be due to chance itself. However, the greatest possibility was caused by the intervention or treatment carried out, specifically the use of the ELSA Speak application to improve students' pronunciation abilities. These findings revealed that the ELSA Speak application contributed significantly to improving students' pronunciation skills. These findings were in line with the research study conducted by Rinaepi et al. (2022) with the title "The Effectiveness of Elsa Speak Application to Improve Pronunciation Ability", The research results showed an increase in the average student score of up to 17%. Treatment from the Elsa Speak App was also able to help students improve to achieve a KKM of 82%. This pointed out how well the Elsa Speak app could help students increase their pronunciation.

The researcher also carried out effect size tests to obtain more information about how big the effect or significant differences were between the two groups or the conditions being. The effect size formula calculations got a result of 0.64. Effect sizes ranging from 0.2 to 0.8 value were considered to be in the medium category. In this context, it can be said that the impact of this application on improving students' pronunciation skills is not small, but also not classified as a huge influence. It means that the application made a significant contribution to increasing students' abilities in terms of pronunciation. This interpretation indicated that the use of the ELSA Speak application has a significant influence in improving students' ability to speak or pronounce a word or phrase more phonetically. Based on the findings of this study, coincide with the conclusions of Tamala & Santosa (2023), who consider the Elsa application as a useful and valuable tool that can be used in teaching and learning activities. Similar statement, according to the t-test statistical analysis, there was a noticeable improvement in scores before and after the treatment with the ELSA app. The researcher concluded that there was a significant impact on students' learning of pronunciation after using the ELSA app (Rismawati et al., 2021). The application could help the teacher in pronunciation class, since the ELSA Speak affected students' English pronunciation in a good way, as evidenced by the post-test scores, which were higher compared to the pre-test scores in the research study conducted by Pangastuti (2021).

The results of this study supported the alternative hypothesis (H1) which states that there is a difference between the pre-test and post-test results. This means that using the ELSA Speak Application has a positive impact on improving students' pronunciation skills. This shows that the application can be an effective tool in helping students improve their pronunciation skills effectively. This result is consistent with those of a similar study conducted by Aswaty & Indari (2022), the alternative hypothesis proposed by the researcher was accepted, confirming that the ELSA (English Language Speech Assistant) application had a significant effect on the speaking abilities of eleventh -grade students at MAS Darul Al Muhajirin during the 2021/2022 academic year. The study results from Muamar et al. (2022) demonstrated a similar finding. The test value showed (11.501), which exceeded the t-table value, along with the mean scores of the pre-test (51.94) and post-test (63.47), indicating that students' pronunciation improved after using the application.

Students' Experience Towards the Performance of the ELSA Speak App as Their Practice Partner

The questionnaires distributed have a different focus to provide a holistic view of students' experiences in using the ELSA application. The first questionnaire was designed to evaluate students' experiences in using the ELSA application. Questions covered aspects such as user interface, availability of materials, level of difficulty, and general satisfaction with using the app. The four points of this aspect were sent out to students and garnered good responses. When compared to the previous approach, the students accepted that utilizing the ELSA (English Language Speech Assistant) application gave an easier and much simpler experience in practicing English pronunciation. They emphasized that the process of operating this application is very easy, from signing in to using the features provided to improve their pronunciation skills. These students felt that they had no difficulty in using the various training features in the ELSA application. Moreover, the students agreed that ELSA provides practicality in practicing English pronunciation that they did not find in the old method they used before. They admitted that the simplicity of the app's interface, particularly its usage of training tools had improved the effectiveness learning process. They are willingness to suggest ELSA to friends and relatives as a partner for bettering English pronunciation proves a high level of satisfaction with this application.

The second questionnaire was designed to assess students' perceptions of the development of their pronunciation abilities after using the ELSA application. The questions in this questionnaire included students' awareness of correct pronunciation, their confidence in speaking, and how effective the application is in helping them improve their pronunciation. On the whole of the result of this focus, the students concur that ELSA is a great training application for helping them with their English pronunciation, also they believe that utilizing this program is more advantageous than the outdated approach they were previously acquainted with. According to the

findings of the closed-ended questionnaire above, the students concur that this application performance is extremely beneficial in the process of improving their English pronunciation skills. They all admitted that ELSA's pronunciation mistake recognition and feedback helped them realize where their pronunciation issues were. Furthermore, they believed that ELSA assisted them in identifying weak spots in pronunciation that required improvement. The students felt that ELSA helped them rectify their pronunciation mistakes in English efficiently. They agreed that the feedback benefited them by offering clear explanations to help them fix mispronunciations, which enabled them to focus on the mistakes they needed to enhance. Overall, it can be concluded that students are convinced that ELSA Speak is a very useful and effective partner in helping them improve their English pronunciation by providing easy-to-understand feedback explanations, and also guiding them to improve their English pronunciation skills. Students can run the application independently, through a user-friendly interface, this application encourages student involvement in the learning process. This researcher's findings are in line with statements from previous research due to the students' perceptions. The Automatic Speech Recognition System on the ELSA Speak app provides great benefits in learning pronunciation as it helps students correct their errors and mistakes with detailed instructions for each sound (Ngoc et al., 2024). The participants in this research admitted that ELSA's recognition of pronunciation errors and feedback was helping them identify their pronunciation issues. They agreed that the feedback provided clear explanations for correcting mispronunciations, thereby enabling them to concentrate on the aspects of pronunciation that needed enhancement.

The finding aligned with Darsih et al. (2021). In their study result, the students expressed strong agreement concerning the feedback provided during the activities. Thus, it can be inferred that the assessment feature in the ELSA Speak application provided users with the opportunity to evaluate their pronunciation effectively. The data results from Yosintha & Rekha (2022) also indicated that students held a favorable view of The Elsa Speak when it was employed in their online pronunciation learning. These tools were engaged, stimulated, and provided students with greater flexibility and opportunities to enhance their autonomy. The app's content, pedagogy, assessment flexibility, multimedia, and user interface are all good. It boosted students' motivation to continue practicing their pronunciation (Silaen & Rangkuti, 2022). The researcher's findings also matched with Ridhon & Daulay (2023). Based on student testimonies formed in interviews, indicated that the gamification element of the Elsa Speak application can enhance students' English articulation.

CONCLUSION

The ELSA Speak application is a good training partner to help students improve their pronunciation skills. This application successfully addresses students' learning needs by offering a method that actively engages students in the learning process, provides detailed identification of pronunciation errors, delivers feedback with a clear explanation, and demonstrates how the right pronunciation sounds. Furthermore, the application's flexibility allows students to explore additional vocabulary and customize their learning topics. Practicing pronunciation through this application potentially accelerates students' pronunciation development. Still, the involvement of teachers in the preliminary learning process is important to guide and monitor the students' progress.

However, this study has several limitations. First, the research involved only students from one classroom, which means the result may not represent the entire student population. Second, the close-ended questionnaire format also limited the depth of the students' perspective. The upcoming research should include larger and diverse groups of students and use different research methods to acquire better understanding how effective the ELSA Speak application in various educational context.

REFERENCES

Adityarini, H., Fahdiansyah, M. F., & Novitasari, V. (2022). Enhancing Students' Pronunciation using Android Pronunciation Application. *Advances in Social Science, Education and Humanities Research*, *662*, 828–835.

Aswaty, P., & Indari, A. (2022). The Effect of Using ELSA (English Language Speech Assistant) Speak Application on Students' Speaking Ability for The Eleventh Grade of MAS Darul Al Muhajirin in The Academic Year 2021/2022. *Jurnal Serunai Ilmu Pendidikan*, *8*(1).

Chen, L., Chen, P., & Lin, Z. (2020). Artificial Intelligence in Education: A Review. *IEEE Access*, *8*, 75264–75278. https://doi.org/10.1109/ACCESS.2020.2988510

Cohen, L., Manion, L., & Morrison, K. (2018). *Research Methods in Education* (eight). Routledge.

Creswell, J., & Creswell, J. (2018). *Research Design Qualitative, Quantitative, and Mixed Methods Approaches* (fifth). SAGE Publication.

Cruttenden, A. (2014). *Gimson's Pronunciation of English* (8th ed.). Routledge. www.routledge.com/cw/cruttenden

Darsih, E., Wihadi, M., & Hanggara, A. (2021). Using ELSA App in Speaking Classes: Students' Voices. *Proceedings of the 1st Universitas Kuningan*

International Conference on Social Science, Environment and Technology, UNISET 2020. https://doi.org/10.4108/eai.12-12-2020.2304993

el Majidi, A., de Graaff, R., & Janssen, D. (2021). Debate as a pedagogical tool for developing speaking skills in second language education. *Language Teaching Research*. https://doi.org/10.1177/13621688211050619

Ersan, M., Kurnia, F. D., & Fadilah, E. (2022). Improving Students' Speaking Ability Using Vlog Media at SMK Negeri 1 Arjasa. *Budapest International Research and Critics Institute (BIRCI-Journal)*, *5*(1), 5646–5656. https://doi.org/10.33258/birci.v5i1.4271

Hanna, A. N., Harmayanthi, V. Y., & Astuti, S. (2022). *The Effect of Elsa Speak App Towards Students' ... The Effect of Elsa Speak App Towards Students' Speaking Skill*. 16–20. https://doi.org/10.37640/ice.01.240

Maiza, M. (2020). An Analysis of Students' Pronunciation Errors. *Journal of English Education and Literature*, *1*(1), 18–23.

McDonough, J., Shaw, C., & Masuhara Hitomi. (2013). *MATERIALS AND METHODS IN ELT* (3rd ed.). John Wiley & Sons.

Milena Andrade Quiñónez, G., Bosco School, D., & Rebeca Naranjo Corría, E. (2021). The Influence of Error Correction on the Development of the English-Speaking Skill. *Journal for Research Scholars and Professionals of English Language Teaching*, *5*(26). www.jrspelt.com

Muamar, Ampa, A. T., & A M St. Asmayanti. (2022). Improving The Students' Pronunciation Using English Language Speech Assistant (ELSA) Application. *Journal of Language Testing and Assessment*, *2*(2), 119–124. https://doi.org/10.56983/jlta.v2i2.153

Ngoc, N. K., Thanh, N. T. M., & Thanh, N. T. M. (2024). Tertiary Students' Perception on ELSA Speak Application for Pronunciation Learning. *European Journal of Applied Linguistics Studies*, *7*(1), 1. https://doi.org/10.46827/ejals.v7i1.483

Pangastuti, D. (2021). The Effect of "ELSA Speak" Application on students' Pronunciation in English. *Prosiding Pekan Ilmiah Mahasiswa Unis*, *1*, 127–133.

Quinde, S. J. B., & Prudente, J. E. D. L. R. (2023). *The Mobile Application "ELSA" as a Self-Learning Tool to Reinforce Oral Skill for Young Learners*. Universidad Estatal Peninsula De Santa Elena School of Education and Languages.

Rao, P. S. (2019). The importance of english in the modern era. *Asian Journal of Multidimensional Research (AJMR)*, *8*(1), 7. https://doi.org/10.5958/2278-4853.2019.00001.6

Richards, J. C. (2008). Teaching Listening and Speaking From Theory to Practice. *Cambridge University Press*, *35*(4). www.cambridge.org

Ridhon, M., & Daulay, S. H. (2023). Enhancing Students' Oral Articulation in English by Using Gamification: Students' Perception. *Ethical Lingua: Journal of Language Teaching and Literature*, *10*(2). https://doi.org/10.30605/25409190.556

Rinaepi, Triwardani Henni Rosa, & Azi Raysal Nur. (2022). The Effectiveness of ELSA Speak Application to Improve Pronunciation Ability. *Jurnal Fakultas Keguruan & Ilmu Pendidikan*, *3*(1), 28–33.

Rismawati, D., Suryana, Y., & Agustiana, V. (2021). The Effectiveness of ELSA Speaking Application in Improving English Pronunciation. *The Proceedings of English Language Teaching, Literature, and Translation (ELTLT)*, *10*, 177–184.

Ristati, Bahing, Retsi, O. D., Haryani, T., & Amalia, N. (2024). Challenges in Pronouncing English Consonant Fricatives: Insights from Indonesian EFL Learners. *Linguistics and English Language Teaching Journal*, *12*(2), 160–167.

Saragih, E. E., Tabrani, N. P., & Muthmainnah, N. (2021). The Use of Digital Feedback on ELSA Speak in Learning Pronunciation for Seventh Grade of Junior High School. *JEELL (Journal of English Education Linguistics, and Literature)*, *8*(1), 133–145. https://doi.org/10.32682/jeell.v8i1.1937

Shen, M., & Chiu, T. (2019). EFL Learners' English Speaking Difficulties and Strategy Use. *Education and Linguistics Research*, *5*(2), 88. https://doi.org/10.5296/elr.v5i2.15333

Silaen, T. N., & Rangkuti, R. (2022). Elsa Speak App Usage in Blended Learning During The Covid-19 Pandemic: Students' Perspectives. *Journal of Basic Education Studies*, *5*(1), 26–34.

Tamala, V., & Santosa, M. (2023). *ELSA Speak Application for English Language Teaching and Learning* (M. Santosa, Ed.; 1st ed.). Nilacakra Publishing House.

Yosintha, R., & Rekha, A. (2022). "ELSA Speak" in an Online Pronunciation Class: Students' Voice. *IJEE (Indonesian Journal of English Education)*, *9*(1), 160–175. https://doi.org/10.15408/ijee.v9i1.23033